

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: )  
)  
Towns et al. ) Group Art Unit: unknown  
)  
Application No.: ) Examiner: unknown  
)  
Filed: Herewith )  
)  
For: POLYMER PREPARATION )  
)

Commissioner for Patents  
Washington, DC 20231

**PRELIMINARY AMENDMENT**

Please amend the above application as follows:

In The Specification

- On page 1, before the first paragraph, please add:
  - ▶ This case claims priority to the following, each of which is incorporated by reference:
    - ▶ This is a continuation of Application No. 09/518,991, filed March 3, 2000,
    - ▶ which is a continuation of U.S. Provisional Serial No. 60/160,953 filed October 22, 1999;
  - ▶ and claims priority from
    - ▶▶ UK Patent Application No. 9905203.7 filed March 5, 1999; and
    - ▶▶ UK Patent Application No. 9925653.9 filed October 29, 1999.

- On page 1, before the first paragraph, please add the subheading -- Field of the Invention --
- On page 1, before the second paragraph, please add the subheading -- Background of the Invention --
- On page 3, line 15, please add the subheading -- Summary of the Invention --
- On page 12, line 15, please add the subheading -- Brief Description of the Drawings --;
- On page 12, line 26, please add the subheading -- Detailed Description --

### In The Claims

Please delete claims 1-20 and substitute the following new claims 21-35:

21. A process for coupling aromatic monomers, which comprises coupling in a reaction mixture an aromatic monomer having at least one boron derivative functional group selected from the group consisting of a boronic acid group, a boronic ester group and a boraine group, and an aromatic monomer having at least one reactive halide functional group; wherein the reaction mixture comprises a catalytic amount of a catalyst suitable for catalysing the coupling of the aromatic monomers, and an organic base including a tetraalkylammonium entity in an amount sufficient to convert the at least one boron derivative functional group into  $-BX_3^-$  anionic group(s), wherein X is independently selected from the group consisting of F and OH.

22. A process for coupling aromatic monomers, which comprises preparing under non-coupling conditions an organic cation salt of an aromatic boronate monomer by the reaction of an aromatic monomer having at least one boron-derivative functional group with an organic base including a tetraalkylammonium entity in an amount sufficient to convert the at least one boron-derivative functional group into boronate anionic group(s) ( $-B(X)_3^-$ ) wherein X is independently selected from the group consisting of F and OH, and then coupling the organic cation salt of the aromatic boronate monomer with an aromatic monomer having at least one reactive halide functional group in a reaction mixture in the presence of a catalyst suitable for catalysing the coupling by elimination of a halide functional group and a boronate anionic group.

23. A process according to claim 21 or 22, wherein X is OH.

24. A process according to claim 23, wherein at least 1.5 equivalents of said organic base per boron-derivative functional group is provided in the reaction mixture.

25. A process according to claim 23, wherein at least two equivalents of said organic base per boron-derivative functional group is provided in the reaction mixture.

26. A process according to claim 21 or 22, wherein the organic base is selected from the group consisting of tetraalkylammonium carbonates, tetraalkylammonium bicarbonates and alkylammonium hydroxides.

27. A process according to claim <sup>21</sup>~~22~~, wherein the organic base comprises R' R'' R''' R'''' NOH, wherein R' is a C<sub>1</sub> - C<sub>6</sub> alkyl group, and R'', R''' and R'''' are each independently hydrogen atoms or C<sub>1</sub> - C<sub>6</sub> alkyl groups.

28. A process according to claim 27, wherein the organic base is selected from the group consisting of (CH<sub>3</sub>)<sub>4</sub>NOH, (C<sub>2</sub>H<sub>5</sub>)<sub>4</sub>NOH and (C<sub>3</sub>H<sub>7</sub>)<sub>4</sub>NOH.

29. A process according to claim 21 or 22, wherein the organic base is a tetraalkylammonium carbonate or a tetraalkylammonium bicarbonate.

30. A process according to claim 21 or 22, wherein the organic base is used in combination with an aqueous solution of an inorganic base.

31. A process according to claim 30, wherein the inorganic base is NH<sub>4</sub>OH.

32. A process according to claim 21 or 22, wherein the reaction is carried out in the absence of alkali metal cations.

33. A process according to claim 21 or 22, wherein at least one of the aromatic monomers is a 2,7(9,9-di-n-octylfluorene).

34. A process according to claim 21 or 22, wherein a solvent which is miscible with water and in which the reactive components are soluble is used.


35. A process according to claim 21 for 22, wherein the catalyst is a palladium catalyst.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

Dated: March 4, 2002

By:   
Therese A. Hendricks  
Reg. No. 30,389